

This is a repository copy of *Youth representations of environmental protest*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/175075/>

Version: Published Version

Article:

Dunlop, Lynda orcid.org/0000-0002-0936-8149, Atkinson, Lucy, Turkenburg, Maria Gertrudis Wilhelmina orcid.org/0000-0002-2841-3339 et al. (1 more author) (2021) Youth representations of environmental protest. *British Educational Research Journal*. pp. 1540-1559. ISSN 0141-1926

<https://doi.org/10.1002/berj.3737>

Reuse

This article is distributed under the terms of the Creative Commons Attribution (CC BY) licence. This licence allows you to distribute, remix, tweak, and build upon the work, even commercially, as long as you credit the authors for the original work. More information and the full terms of the licence here:

<https://creativecommons.org/licenses/>

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

Youth representations of environmental protest

Lynda Dunlop^{*} , Lucy Atkinson, Denise Mc Keown and Maria Turkenburg-van Diepen

University of York, UK

A necessary condition for a functioning democracy is the participation of its citizens, including its youth. This is particularly true for political participation in environmental decisions, because these decisions can have intergenerational consequences. In this article we examine young people's beliefs about one form of political participation—protest—in the context of communities affected by fracking and associated anti-fracking protest, and discuss the implications of these representations for education. Drawing on focus groups with 121 young people (aged 15–19) in five schools and colleges near sites which have experienced anti-fracking protest in England and Northern Ireland, we find young people well-informed about avenues for formal and non-formal political participation against a background of disillusionment with formal political processes and varying levels of support for protest. We find representations of protest as disruptive, divisive, extreme, less desirable than other forms of participation and ineffective in bringing about change but effective in awareness-raising. These representations are challenging, not least because the way protest is interpreted is critical to the way people think and act in the world. These representations of environmental protest must be challenged through formal education in order to safeguard the UN Convention on the Rights of the Child and ensure that the spirit of Article 11 of the UK Human Rights Act is protected.

Keywords: participation; politics; protest; youth

Introduction

A necessary condition for a functioning democracy is the participation of its citizens, including its youth (European Union, 2020). In recent years, young people around the world have been at the forefront of climate activism, with demands for climate and intergenerational justice made by the School Strikes 4 Climate movement (Thomas *et al.*, 2019). Greta Thunberg in Sweden, Vanessa Nakate in Uganda and Izzy Raj-Seppings in Australia have raised awareness of the climate emergency, its origins in extraction and consumption of fossil fuels, and the local—and differential, depending on who you are and where you live—impacts of climate change. These young climate activists have used a range of methods, including social media, legal injunctions and peaceful protest, to draw attention to damaging policies and practices, and also to draw attention to whose voice is heard in discussion about climate action.

^{*}Corresponding author. University of York, Heslington, York YO10 3NJ, UK. Email: lynda.dunlop@york.ac.uk

Perceptions of environmental protest in the wider population of youth are less well understood. The present study aims to contribute to understanding youth representations of protest through their experiences of protest about a specific environmental issue: hydraulic fracturing ('fracking') and the implications of this for the role that teachers, schools and educational policymakers can play in environmental activism of this nature.

Fracking is a controversial practice with consequences for energy, climate and inter-generational justice, viewed by some as important in the transition to a low-carbon economy (Priestly, 2018) and to meet the 2050 net zero greenhouse gas emission target for the UK arising from the Paris Climate Accord, but by others as a technology that inhibits the development of green alternatives and which has a more long-term damaging greenhouse gas contribution than coal or oil due to methane emissions (Howarth *et al.*, 2011). Since 2011, in common with proposed fracking in other countries, resistance to fracking has taken shape in the UK through grassroots opposition movements (Muncie, 2019). Social psychology indicates that anger at perceived injustice, social identification and belief that it is possible to make a difference are important antecedents to protest (van Zomeren *et al.*, 2012). Fracking is currently not permitted in any jurisdiction of the UK, with the most recent decision to immediately end licensing for oil and gas exploration resulting from a cross-party motion passed in the Northern Ireland Assembly in October 2020. This motion does not represent an outright ban, and the door is open to related processes which use less water (Fowler, 2020). At the same time, responses to the plans for a gold mine in the Sperrin mountains in Northern Ireland, and a polyhalite mine in the North York Moors National Park in Northern England, indicate that environmental protests about extractive industries continue to be a feature of life for people in affected communities and beyond.

Education, fracking and protest

Making sense of the impacts of extractive industries, and knowing how to intervene in decision-making, requires an understanding of science, technology, geography, economics and politics, and the need to think at different scales, from local impacts on water supply and safety to impacts on global climate. It therefore cuts across different school subjects, including citizenship, geography and science. In the regulated subject-level conditions and requirements for GCSE (General Certificate of Secondary Education, the qualification taken at ages 14–16 by most young people in England and Northern Ireland), fracking is explicit only in the criteria for geology, constituting fewer than 0.1% of total GCSE entries (Joint Council for Qualifications, 2019), which states that students are expected to learn about the technological difficulties and environmental issues involved in the exploration and exploitation of hydrocarbon deposits, including fracking (Ofqual, 2016). Protest is absent from these subject criteria—but of course, the national curriculum and subject criteria represent a minimum requirement, and radical approaches which demand the politicisation of (for example) science education are being used, including those which challenge the assumption that such education can or ought to be value-free and apolitical, and the need to support students as 'subjects in change and not objects of change' (cf. Alsop & Bencze, 2014 and chapters within).

In a review of environmental education policy in England, Glackin *et al.* (2018) found the environment to be limited in national educational policy and associated assessment specifications, with restricted exposure to the environment found in science and geography school schemes of work, and limited attention to education *for* the environment (as opposed to education *about* or *in* the environment). Glackin *et al.* recognise the tension between the economic imperative and the potential for environmental education to be a place where the limits, costs and consequences of capitalism can be debated. However, the potential for such debate is stifled by what Eaton and Day (2020) describe as ‘petro-pedagogy’: a range of policies and practices which obstruct young people from understanding and questioning the role of corporate power, and which insulate fossil fuel industries from criticism, evident in policy documents such as the Teachers’ Standards and associated accountability regimes (Dunlop *et al.*, 2020). These obstructive approaches include an insistence on balance in classrooms, the insertion of industry perspectives, faith in technological solutions and an emphasis on individual rather than collective actions and responses. Malmberg and Urbas (2020) have argued that the focus in education on individual responsibility over the collective risks the unmaking of citizens and democratic politics through depoliticisation, which has implications for citizenship, political participation and democracy, to say nothing of responses to urgent problems such as the climate crisis. This is consistent with an understanding of citizenship as process rather than outcome, and the argument for learning democracy in context (as opposed to teaching citizenship) that Biesta and Lawy (2006) advocate. A shift to learning democracy recognises that educational responsibility for citizenship rests with those who have responsibility for the social, economic and cultural situation, which in part lies with government, at different levels: local and national. It also implies opportunities for meaningful participation and a shift in research emphasis from identifying ‘effective’ ways of teaching citizenship to understanding how young people learn democracy (Biesta & Lawy, 2006). The present study contributes to this field by understanding young people’s experiences of democracy in the context of fracking in their communities.

Young people, political participation and education

Youth participation can be considered as the ‘process of involving young people in the institutions and decisions that affect their lives’ (Checkoway & Gutierrez, 2006). The UN Convention on the Rights of the Child (United Nations, 1989) recognises that political action or inaction impacts children more than other groups in society because of the long-term effects of decisions. It also notes that children’s views tend to go unheard, even on issues which will affect them, and protects the right of children to express views on matters affecting them (Articles 12 and 13) and to freedom of peaceful assembly (Article 15). In the UK there is little support for the right to public participation in decisions about fracking (Aczel *et al.*, 2018) and the influence of the public on shale gas decisions is perceived to be minimal (Whitton *et al.*, 2017). For youth specifically, there are few opportunities to be involved in environmental governance (Thew *et al.*, 2020). That said, young people can participate in politics in a range of ways, from lobbying for specific positions on existing issues, boycotts,

petitioning, protesting, consuming and investing ethically, exposing unethical practice and having conversations (Hay, 2007). Henn and Foard (2014) found that young people are interested in and committed to the political process, but consider it confusing and have few opportunities to intervene effectively, reporting that politicians tend not to champion youth policy priorities. In our participants' age group and locations (England and Northern Ireland), this is at least in part due to the parliamentary and local government franchises being reserved for those aged 18 or above.

In a range of national contexts, it has been found that young people reportedly participate in politics in different ways to older generations, with a greater emphasis on social media campaigning and demonstration amongst youth (Melo & Stockemer, 2014; Boulianne, 2015; Renström *et al.*, 2020). Linked to their greater propensity to protest is the importance youth attach to cause-based activism (Soler-i-Martí, 2015), and this is seen in the leadership of young people in activism in response to the climate emergency (Zummo *et al.*, 2020). Farthing (2010) summarises three visions of youth political participation: disengaged (young people as apolitical), engaged (young people as political, but in new ways) and radically unpolitical (young people as politically rejecting politics but taking their agenda elsewhere). Farthing describes radically unpolitical young people as concerned with complex, global problems and individualised solutions, and targeting not the state, but multinational corporations and non-governmental organisations using strategies such as political consumerism, e-democracy and active disengagement.

Although there is evidence that young people value attention to local communities (Alexander & Weekes-Bernard, 2017), recent education policies such as those promoting 'fundamental British values' have tended to prioritise the national dimension (Starkey, 2018) and crowd out local concerns. In the locations of this study, young people can expect to learn about political participation at school through Citizenship in England and Learning for Life and Work in Northern Ireland (CCEA, n.d.). In an analysis of citizenship education in England, Weinberg and Flinders (2018) have found that individualised visions of citizenship focusing on good character (being honest, responsible and law-abiding) prevail over participatory (taking action and leading within established systems and structures) and justice-oriented approaches (questioning, debating and changing established structures which are responsible for reproducing injustices). Weinberg and Flinders argue that there is a need to ensure that citizenship does not promote anti-democratic scenarios in the classroom and that students are able to access a political education which prepares them 'to be much more than an obedient, employable workforce'. In contrast, in Northern Ireland, the emphasis of citizenship education is on the core concepts, including 'Human Rights and Social Responsibilities', 'Equality and Social Justice' and 'Democracy and Active Participation', which are regarded as problematic from the outset (Worden & Smith, 2017). However, citizenship is subsumed into 'Learning for Life and Work', which is felt by some to occupy a peripheral position which undermines its quality (O'Connor *et al.*, 2019) and status (Worden & Smith, 2017; Gallagher, 2019). Protest does not feature in either of these curricula, although it may be included, depending on how participation is conceptualised. In Columbia, Edwards (2012) found that pedagogies which promote a more open classroom climate and the discussion of political and social issues contributed to social movement-oriented citizenship, defined as

‘peaceful protest, proactive community involvement, participation in activities to support human rights, and support for protection of the environment’, and that teacher advocacy for these ideas about citizenship was also a key factor.

Fracking and protest

At the time of data collection (December 2019 and February 2020), a moratorium on fracking had just been announced in England. Meanwhile, a decision on an application for a petroleum licence (which included unconventional shale gas extraction) by Tamboran Resources (UK) was pending a decision from a Minister of the Department for the Economy, which could not be taken because none were available following the collapse of power sharing at Stormont in January 2017. There was opposition to the prospect of fracking operations at both locations, including through protest.

Protests tend to happen where there are legitimate grievances and often arise in response to situations which affect people who do not have the power to respond in other ways (Kilgo & Harlow, 2019). However, it is important to preface discussions about fracking and protest with the understanding that the absence of protest does not indicate consent: Eaton and Kinchy (2016) found a wide range of grievances in non-mobilised extraction communities, attributing the absence of protest to ambivalence, limited organisational capacity and few political opportunities. Where protest occurs, it is often described by activists as an option of last resort, taken only when local concerns are ignored or overridden by government (Gilmore *et al.*, 2019). This option of last resort is currently under threat from the Police, Crime, Sentencing and Courts Bill 2021 which moves to give police more powers to restrict non-violent protest, and has been contextualised by Cressida Dick, Metropolitan Police Commissioner, against the Extinction Rebellion protests (Home Office, 2021).

The framing of protests by government, media and police does not always correspond well to the justifications of protesters. According to Pickard (2019), successive British governments have legislated to monitor, repress and criminalise protest actions. In the context of fracking, in-depth interviews with adult protesters found experiences of disproportionate police responses to anti-fracking protest, including disparaging public messages about campaigners, encouragement of the use of civil injunctions by the companies involved with fracking, and narrow and changeable interpretations of peaceful protest eroding trust between police and protesters (Gimore *et al.*, 2019). Whilst news coverage is essential to the visibility of protest, the media often negatively portray protesters who challenge the status quo (Kilgo & Harlow, 2019). Anti-fracking protesters are represented by the media as both virtuous and disreputable, respectable and dangerous (Muncie, 2019), depending on their affiliation. In the case of anti-fracking protests, Gilmore *et al.* (2019) have found that media and police framing of protesters as outsiders misrepresents the composition of the protest. Furthermore, Muncie observed that media representations often conflate peaceful and non-peaceful protests, and focus on associated violence of the protest with little attention to the violence (sudden or slow) promoting the protest. These media narratives undermine the right to protest.

In the field of climate activism research, O’Brien *et al.* (2018) have developed a typology for understanding dissent in relation to climate activism, describing dissent

as dutiful, disruptive or dangerous. These three forms of dissent are based on the empirical reality of youth in relation to climate change: ‘dutiful dissent’ works within existing systems to influence policy change, ‘disruptive dissent’ contests existing norms and practices to change policy and outcomes, and ‘dangerous dissent’ subverts existing structures or creates parallel structures by mobilising people around new norms and values. Whilst the concerns about fracking extend beyond its contribution to global climate change associated with greenhouse gases—to include local concerns about water, air and noise pollution—these types of dissent are relevant to understanding representations of anti-fracking protest.

Research question

To date, we have found few studies which focus on young people’s representations of anti-fracking protests. This is an important area of study because decisions about fracking have intergenerational consequences for people and the environment, and protest is one way in which young people can participate in politics, unrestricted by age. Representations of anti-fracking protest are likely to be relatable to other environmental protest movements, and to be useful for practitioners in education and youth-work settings. The research question addressed by this study is: *what are young people’s representations of anti-fracking protest?* We discuss these representations in terms of how young people are learning democracy in these communities.

Theoretical framework: social representations

Social representations are described by Howarth *et al.* (2014) as ‘the lens through which to view and create social and political realities, mediate people’s relations with these socio-political worlds and defend cultural and political identities’, and as such are seen as important for understanding political participation. Here, they are used to help us understand what is seen as acceptable and desirable amongst young people in terms of environmental protest and therefore to identify educational priorities. Social representations theory has its origins in the work of Moscovici (1976). Moscovici focused on how new knowledge became appropriated by different publics and became socialised into common sense, describing social representations as systems of values, ideas and practices which allow people to name, classify and create meaning about aspects of the world through communication (Moscovici, 1976).

In doing social representations research, we are interested in what Harré (1998) describes as discursive practices which exist only in interpersonal interactions. This comes from a dialogical epistemology (Marková, 2000) which presupposes that knowledge is co-constructed through the interaction (often tensions) between thought, language and social practices, and as such is in flux. This view of knowledge is consistent with the aim of social sciences, as described by Bakhtin in Marková (2000), to understand, transmit and interpret discourses of others, and is necessarily dialogical because it concerns humans interacting cognitively with each other (Marková, 2000). Social representations are not always consensual, and do not always correspond to empirical realities, but they provide a common code of communication and understanding amongst social groups (Martínez-Sierra *et al.*, 2016) at a

given period of time. Furthermore, social representations are capable of influencing the behaviour of people, whether intended or not (Moscovici & Duveen, 2000) because they convey information about what social groups value.

Two processes are key to constructing social representations: anchoring and objectification. Höijer (2010) describes anchoring as naming (or labelling) the phenomenon—in this case, anti-fracking protest—and connecting it to well-known emotions, themes and metaphors. Objectification turns the abstract idea into something concrete (e.g. speech and action). Social representations enable existing structures to be reinforced or challenged, depending on how the knowledge is used. Buijs *et al.* (2012) use social representations to understand how people see natural resource management and note that more powerful groups (whether that power is formal or informal) tend to be able to influence the development of social representations. They identify core and peripheral components of a representation, with the core more consensual and stable and the peripheral where there was more conflict or disagreement. Approaches based on social representations theory have been used to understand how the public understands climate change (Smith & Joffe, 2013) and how the media engages the public with climate change (Höijer, 2010; Jaspal & Nerlich, 2014). In relation to fracking, Bugden *et al.* (2017) have drawn on social representations to understand how communities with a history of resource extraction have made sense of fracking. Less attention has been paid to social representations of anti-fracking protest, and none to our knowledge have focused on youth.

Materials and methods

This study was located in communities in England and Northern Ireland, where exploratory fracking has been operational, or where applications to frack have been under consideration by planning authorities. Data were collected in County Fermanagh in Northern Ireland and Lancashire in England. We interpret young people's responses in relation to the wider literature on youth political participation and environmental activism, and the specific local contexts in these locations.

Participants

A total of 121 young people took part in the study (67 stated female, 49 male and 5 did not state), ranging in age from 15 to 19, with a minority (19) in an age group allowing them to vote in elections. The majority of the participants were interviewed in Lancashire and a minority in Fermanagh. All focus groups took place in educational institutions and voluntary informed consent was obtained from participants in line with procedures approved by the relevant ethics committee.

Design

This study drew on the analysis of focus group transcripts collected during an in-depth qualitative study of young people's experiences of fracking in their communities. In this article we refer to data corresponding to (1) an open question about what young people know about the impact(s) of fracking and (2) a decision-making

scenario in which we asked participants to imagine that they lived in a community where a company has applied for permission to frack for shale gas, but where the decision has not yet been taken. Young people were asked what they needed to know to respond to the scenario, how they could demonstrate support or opposition through political processes, and what other actions they could take to express their views.

Procedures

Schools and colleges within a 20-mile radius of a proposed or active exploratory fracking site in the UK (prior to the moratorium announced in England in November 2019 and after the close of the consultation exercise on a petroleum licence application in Northern Ireland in July 2019) were invited to participate in the study. A total of five institutions in England and Northern Ireland consented to participate. Data were collected during 22 focus groups, lasting between 30 and 60 minutes. Focus groups were used to create a situation where young people were responding not only to the questions that we posed, but also to the ideas of others. We encouraged disagreement and the identification of alternatives, and where there was a consensus, we sought reasons for agreement. Focus groups were audio-recorded and transcribed, and were anonymised on, or shortly following, transcription. Data were stored securely in a password-protected cloud folder.

Data analysis procedures

Focus group transcripts were imported into NVivo 12 (QSR International, 2020) for analysis. The analysis focused on where young people anchored ideas about protest to other values, ideas and practices. Drawing on the method used by Vigeta *et al.* (2012), a four-step procedure was used to analyse focus group transcripts. First, all incidences where young people talked about political participation, including the activities defined by Hay (2007) and Pickard (2019), were identified. This included responses to the set of focus group questions on political participation, but also any other mentions of protest during the focus group. In the next step, we identified key phrases which revealed connections to participants' beliefs, values, attitudes or practices in relation to political participation. This corresponds to the anchoring process. These key phrases were summarised as a central idea. Finally, we reassembled the key phrases for related central ideas into a discourse of the collective subject (Lefevre & Lefevre, 2014). Table 1 provides an overview of this process for one of the social representations we found: protest is less desirable than other forms of participation.

The collective subject discourses were constructed from extracts of data from individuals in relation to common anchors, so are written in the first person singular. Each collective subject discourse represents a worldview present amongst the participants that provides insights into the values, beliefs, behaviours and attitudes of young people in fracking communities in relation to anti-fracking protest at the time of the study. Findings are presented through core (more consensual) representations, with divergence identified in relation to each social representation.

Table 1. Constructing the discourse of the collective subject for protest is less desirable than other forms of participation

Key phrase	Source	Central idea	Discourse of the collective subject
<i>I dislike protests.</i>	Inst 1,	Negativity	<i>I dislike protests. Protests cause more bad than good. With fracking, I think it's a much better way just to talk to the authorities about it. Go directly to speak to the company, go to court, get a petition signed, write to your local MP or speak to a local council member. The legal route seems the better option. More like a formal way of doing it. You can send formal complaints and complain on social media and newspapers because you can get your views across quite easily and that gains a wider audience and it can affect more people. It reaches everyone, doesn't it?</i>
<i>Protests cause more bad than good.</i>	FG1	Authority	
<i>With fracking, I think it's a much better way just to talk to the authorities about it.</i>		Formality	
<i>Go directly to speak to the company.</i>	Inst 2,	Direct	
<i>Go to court.</i>	FG12		
<i>Get a petition signed.</i>	Inst 1,	Formality	
	FG3		
<i>Write to your local MP.</i>	Inst 5,	Reach	
	FG21		
<i>You need to speak to like a local council member.</i>	Inst 4,	Authority	
	FG7		
<i>The legal route seems the better option.</i>	Inst 2,	Formality	
	FG12		
<i>More like a formal way of doing it.</i>	Inst 1,	Authority	
	FG3		
<i>You can send formal complaints.</i>	Inst 4,	Formality	
	FG8		
<i>And complain on social media and newspapers.</i>	Inst 3	Formality	
	FG15		
<i>Because you can get your views across quite easily.</i>	Inst 3,	Complaint	
	FG15		
<i>And that gains a wider audience and it can affect more people.</i>	Inst 1,	Ease of communication	
	FG4		
<i>It reaches everyone, doesn't it?</i>	Inst 3,	Reach	
	FG15		
	Inst 4,	Reach	
	FG8		

Note: Inst = institution; FG = focus group.

Limitations

Social representations are not fixed, they change in use and are modified over time. These are therefore a snapshot of specific communities of young people at a specific time. This study focuses on the social representations found in communities living near proposed or active exploratory fracking sites. We know that there is less support for fracking amongst local communities than there is more generally (Howell, 2018), so these representations cannot be assumed to be representative of communities at a distance from fracking sites. Similarly, studies from the USA indicate that age and sex are factors associated with support or opposition to fracking, with males and older people more supportive of the process (Clarke *et al.*, 2012), meaning that findings need to be interpreted in light of the sample of young people, with females over-represented. Whilst fracking is not currently operational in the study sites following a moratorium in England announced in November 2019, and the passing of a motion to end licensing for oil and gas exploration in Northern Ireland in October 2020, the

representations identified here are important because they relate to how young people make sense of environmental protest. This is likely to be useful in understanding other protest movements, and in understanding young people's needs from education, industry and government.

Results

Young people's responses to anti-fracking protests are set against their broader responses to fracking and political participation in relation to fracking. Whilst the young people in the focus groups held a range of views, negative and ambivalent attitudes towards fracking dominated, and support for fracking hinged mainly upon energy supply and energy sovereignty, or in the context of a transition to renewable resources. Regardless of support or opposition to fracking, there was broad consensus that anti-fracking protest was an inevitable and immediate impact of fracking.

Young people identified a range of ways in which they could make their objections to fracking known, from starting petitions, putting up banners, posting to social media and creating social media campaigns, writing to the council, local MPs and celebrities or social media influencers, protest (specifically disrupting traffic to the site), using the ballot box and joining campaign groups. Some participants reported participation in climate protest and anti-fracking protest, but this was unprompted. Anti-fracking protest tended not to be discussed as a type of climate protest. Whilst fracking was discussed as a climate issue, anti-fracking protests tended to be described in relation to failures in 'democratic' processes and concerns about local water supply and pollution.

Table 2 summarises the representations found in the focus groups with young people, and the supporting discourse of the collective subject is presented in the following sections. Each representation is presented with a collective subject discourse.

Protest is less desirable than other forms of participation

Young people in this study tended to discuss protest in comparison to other forms of political participation:

I dislike protests. Protests cause more bad than good. With fracking, I think it's a much better way just to talk to the authorities about it. Go directly to speak to the company, go to court, get a petition signed, write to your local MP or speak to a local council member.

Table 2. Social representations of anti-fracking protest

Representation

- Protest is less desirable than other forms of participation
 - Protest is disruptive
 - Protest is ineffective
 - Protest raises awareness
 - Protest is divisive
 - Protest is extreme
-

The legal route seems the better option. More like a formal way of doing it. You can send formal complaints and complain on social media and newspapers because you can get your views across quite easily and that gains a wider audience and it can affect more people. It reaches everyone, doesn't it?

This discourse reveals a belief in political processes, even where these have failed the young people. In Lancashire, local decisions taken by the appropriate planning authority were overturned by national government, leaving young people frustrated, angry and impotent. In Fermanagh, the local assembly had just been reopened following its collapse in early 2017 caused by the handling of the renewable heat initiative, during which time ministers were not available for decision-making. 'Direct' and 'formal' forms of participation were believed to be better able to reach decision-makers to influence the attitudes of wider publics, and result in young people being heard—although they weren't. Some attributed not being heard to their youth, and others to their rurality, with low populations and greater logistical challenges to organising physical protests (and fewer people to lobby for change as a result of protest-related disruptions). Some focused on the need for greater reach: there was a belief that protest in or nearer a cosmopolitan area was more likely to be effective due to larger populations and petitions, and social media posts were seen as a way of demonstrating the extent and strength of dissatisfaction with events, without adversely affecting the local community.

Protest is disruptive

Unsurprisingly, protest was represented as disruptive:

If I didn't live near it, I'd be really 'pro' the protesters, but because I live there, it is sort of a problem. They go through 24 h a day protesting. I'd probably be more on their side if they didn't cause such a disruption. I know they have to get in the news to get their message out there, but they seem more of a problem to the everyday person's life than the companies. You're not really contributing to the economy by missing days of your work to protest and you could be hurting other people's jobs in the area or in the industry. Also, the amount of police they always have to put there to monitor it.

A rejection of disruptive dissent is evident here—even those who supported the protest said that they would have preferred for democratic processes to work—along with a prioritisation of individual and economic needs. Some, in contrast, described the disruption as necessary to demonstrate that the population would not be pushed any further. Disruption due to protest was perceived to be both physical and economic, resulting in local people experiencing difficulties travelling to places of work, education and healthcare. Some felt that protest was poorly targeted and could not justify the diversion of resources to protest sites. Others described the disruption as an option of last resort, needed to draw attention to something that has gone wrong with democratic processes.

Protest is ineffective

A core representation was the idea that because protest does not impact industry financially, it is ineffective:

I don't really feel like the protests and stuff really did much, to be honest. People don't listen, especially if you're so young and they think you don't understand as much. It doesn't really help your cause, unless the CEO or whoever knows about it or you hit the pockets, they're not incentivised to do anything about it. People in fracking ignore all these protesters because once they've got the site, they've got the site, and as soon as they're making money they couldn't care less about anything. As much as I would support you, you're wasting your time. It doesn't make any difference. You're not going to make as much of an impact as someone in the industry or [in] a position of power such as an MP. All the protest is just ignored by the government because they want tax revenue and the energy. The protesters did loads and put it in the public mind, but to stop it, they didn't really do as much.

Many young people appreciated what those in favour of fracking want (e.g. temporary energy security, profit and tax revenue), and saw protest as futile if the aim was to obtain the attention of industry and government. Some described their communities as 'vulnerable' and targeted by decision-makers, with not enough (powerful) people being disrupted and not enough MPs who care, or who recognised the concerns of the local population.

There were some differences between the areas in terms of views of effectiveness, with some participants at the Fermanagh site having greater confidence in the effectiveness of protest. However, this tended to be associated with a belief that there were no applications under consideration, whereas the decision was on hold, pending a return to Stormont.

Protest raises awareness

Whilst participants did not see protest as effective in bringing about change, they saw the role of protest in raising awareness and building momentum for a cause, rather than influencing what happened at the site:

If no-one was protesting about it, you probably wouldn't know about it. It does give it the spotlight which it needs. The protest raises awareness, they've managed to get out their view very clearly and very plainly into the public consciousness, but that is where you draw the line, that is as far as it is going to go. I think it is just educating the wider public. We're thinking about it now. You see articles about them on the news, but that's more as a cause of the protest, not saying that a fracking place has been opened in such a place, more 'there's protesters protesting against that'. Whether they're trying to frame the protesters, making them look bad, I don't know.

Young people were convinced of the need for raising awareness about fracking, and whilst they did not think protest was effective in influencing decision-making, some did see its value in making the wider community aware of what was happening in the area via the local news. However, some described this media coverage of protesters as potentially problematic, reporting that it concentrated on the protest, protesters and resulting disruption rather than on the reasons why the protest was occurring, which was believed by some of those more in favour of the protests to cause animosity towards the protests.

Protest is divisive

As well as being disruptive (even to those who are supportive of the action), protest was represented as divisive within communities:

It causes destruction in the local community. It does divide us a lot. Tensions might get higher. You have some people protesting and some people going to work for it. Some people call the protesters a nuisance. There's three farmers who own that area of land and they all got massive sums of money, more than if they would have sold that land to another farmer. They've been getting a lot of hassle. Others are going through hardship. Everyone's arguing everything and no-one really knows. The overall vibe of a community could be changing.

This representation indicates that both fracking and anti-fracking protest were seen as divisive, and to create a negative visual impact on communities. This was a common view even amongst those sympathetic towards protest and the aims of the protesters. Divisions were evident in complaints about the economic impacts of the protests—from annoyance expressed at the cost to the local community of policing the protests, which was perceived to divert resources from other local needs, to perceptions of protesters as 'not contributing' and damaging the local economy. Others objected to the prioritisation of the economy, and believed that this would reap undesirable social and environmental impacts.

Some youth included in the study discussed the involvement of their family and friends in protests. However, there was some framing of protesters as outsiders (particularly the idea that protest was outsourced via environmental campaign groups), which is problematic because of the very local impacts of the protests felt by youth. The perception of protesters as agitating outsiders serves to drive divisions within and beyond communities, casting doubt over who has the right to protest. Regardless of whether this social representation reflects the empirical reality, the perception is what shapes values and attitudes.

Protest is extreme

Related to the failure of formal mechanisms for local people to be heard, protest was seen as an option of last resort. A core representation, found even amongst those who supported the protests, was that protest was 'big', 'going far' and 'extreme.' Some questioned the legality of protests:

You've got to do something extreme to be heard. If you start causing a disruption, that's when people start listening to you. Then you get onto the news and then you get more attention from it. If you're being nice and going to talk to someone, they're just going to push you aside and not care about your opinion. You have to look at the extremes of protests or legal action, because with a big company they don't tend to think about just a little protest outside the gate. You have got to do something big to get the attention of the people at the top. It's a necessity to get it into the public eye. How else do you send a message? If they're going to these lengths and they obviously really care about it.

Protest was represented as an extreme activity in terms of the actions of protesters and what the action of protest meant in relation to the individual, the industry and the state. Some saw the state as protecting industry and protest as a way to resist the actions of the state. Others saw protest as a way to disrupt industry activity. The positioning of protest as extreme by these young people—even those who are in favour of the protest—is problematic because this acts as a barrier to participation and makes it difficult for the objectives of the protest to be achieved.

Discussion

In this section we discuss the social representations characterised above and outline some of the implications for education policy and practice. The analysis revealed a tension in how anti-fracking protest was represented by youth in the communities affected. Whilst negative attitudes towards fracking dominated, and there was anger and frustration with political decision-making at some sites, this did not translate into positive representations of protest. Protest was not seen as a viable method to prevent, or stop, fracking operations in these communities. Protest was represented as ineffective because it fails to target the decision-makers and does not affect the financial bottom line of industry. It was also represented as damaging due to the disruption and division it causes within communities—even where young people supported the aims of the protesters, and where democratic processes had failed them. Protest was seen as an option of last resort, and one which disproportionately affected local residents rather than decision-makers. Although the political context in the two study sites was different, youth in both locations felt let down by political processes. In Lancashire, local decisions had been overturned by the national government, and in County Fermanagh, there had been no minister to take a decision on fracking. The educational question this finding provokes is: *what are young people learning about democracy through these experiences?*

In contrast with young people in Henn and Foard's (2014) study who found the political process confusing, the young people in this study were well-informed about the impacts of fracking, about the planning process and about the ways in which they could influence decisions. Whilst recent research in Catalonia (Soler-i-Martí, 2015) has identified a trend for young people to vote less and protest more, and be more interested in cause-related political participation, we found support for the cause but not the methods of anti-fracking protesters. 'Dutiful' dissent (O'Brien *et al.*, 2018) was favoured over disruptive or dangerous dissent. In common with Henn and Foard, we found commitment to the political process, but few opportunities for young people to intervene effectively. This paradox has been described by Pilkington and Pollock (2015) thus: 'young people are [...] profoundly disillusioned with the current democratic system while continuing to be, in principle, supportive of democratic forms of government and seeking to "be heard" through it'. The discourse (emerging from citizenship education and elsewhere) encouraging youth to engage in civic pathways (such as voting, watching the news, party activism, sending emails to government websites and attending meetings), which positions anger, cynicism and protest in conflict with these pathways, has been critiqued by Banaji (2008). Banaji observes that in research in education and civic values, 'there is an emphasis on conformity rather than on critique, confrontation or challenge; in the UK, there is also an emphasis on speaking and writing in particular ways that abide by the rules and norms set by a ruling elite who show little willingness to alter policies just because citizens do not agree with them'. Our findings suggest that Banaji's analysis has some bearing on anti-fracking protest. This is problematic because, as Banaji argues, mild forms of civic action are tolerated by government, but serve to mask undemocratic policies as well as injustices, inequalities and abuses of power. The representation of protest and protesters is important because these representations can become powerful norms

which dictate what is seen as acceptable, and in this context, where protest is seen as extreme, it can limit the possibilities for political participation.

Implications for education

Young people in both study locations had similar representations of protest in the context of fracking. Education is a devolved matter in the UK, and the educational systems are structured in different cultural, economic and socio-political contexts, reflected in aims for education. Different education policies apply in these jurisdictions: the curriculum, professional standards for teachers and school inspection regimes are different, and the Prevent Duty (Department for Education, 2015) does not apply in Northern Ireland. What do young people's social representations mean for educational policy and practice in relation to science and technology, politics, environment and human rights in these communities and beyond?

In terms of practice, the study suggests a role for education in dealing with some misconceptions about peaceful protest. We identify the need to include environmental politics in education so that young people are aware of the role that protest plays in environmental movements. Whilst young people learn about the role of protest (e.g. in England, the peasants' revolt and the campaign for women's suffrage) in history, there is a need to reinforce the legitimacy and legality of environmental protest in the present and to encourage greater exploration of what happens when political systems fail, and to encourage classroom spaces where disagreement is welcomed and examined. This is a challenge in the current context in Northern Ireland, where citizenship occupies a marginal position, and in England, where citizenship education favours the development of 'good character' over participation or social justice. The social representations created in this study can be used in practice situations, where the aim is both understanding and critique. Asking young people to interpret the collective subject discourses presented here, and to respond in relation to legal and political frameworks such as the UN Convention on the Rights of the Child, the UK Human Rights Act or the UN Sustainable Development Goals, could enable young people to understand the legal and political provisions for protest. Illustrative case studies of peaceful protest may be used to demonstrate the contribution that these actions make to bringing about social change; similarly, the use of 'formal' legal avenues to object to fossil fuel extraction. These might include Youth Verdict's use of human rights law to object to a coal mine on a nature reserve in Queensland, Australia (Bell-James, 2020) and/or the class action of *Environnement Jeunesse* against the Canadian government, which claims that the greenhouse gas reduction targets (and the lack of associated plans to meet said targets) are too weak to avoid dangerous climate change, and that the Canadian government is therefore infringing a generation's fundamental rights (*Environnement Jeunesse*, 2021). The inclusion of collective, youth-led, legal objections to environmental interventions opens up space to include political responses to environmental responses.

Teaching resources and approaches are necessary but not sufficient. Regimes of obstruction to climate action associated with petro-pedagogy (Dunlop *et al.*, 2020; Eaton and Day, 2020; Tannock, 2020) mitigate against politics in the classroom. Currently, the environment tends to fall between science and geography, and there

has been a decline in the amount of environmental education in schools (Glackin *et al.*, 2018). Associated accountability measures have served to silence discussion about environment and politics in schools through absences (what is not required to be taught; what is not valued in accountability measures). There is a need for subjects which deal with the extractive industries, energy resources and climate change to expand, to include the political dimensions of these issues. Gallagher (2019) argues that it is unfair to give schools responsibility for ‘yet another social challenge when their capacity generally is being undermined by a lack of resources’. However, given the adaptations needed to protect people and their environments from the increasing impacts of the climate crisis, there is a need for environmental politics to be recognised in education policy and assessment frameworks to signal the importance of knowing how to participate, and having the capacity to participate, in environmental decision-making. It is important for young people to ‘learn democracy’ in context, as outlined by Biesta and Lawy (2006) (i.e. for a politicisation of education such that both individual *and* collective causes of and responses to environmental problems are included). Malmberg and Urbas (2020) argue that whilst it is possible to have politics (decisions made which affect an association of people) without democracy (the ruling of citizens by themselves), it is not possible to have democracy without politics. They describe the virtue of citizenship, which involves supporting young people to become individuals who are involved in society and participate in politics. Our findings suggest the need for educational spaces to deal with politics, and a broader policy context which welcomes and enables, rather than shuts down, political debate in schools.

Conclusion

Whilst other studies have looked at social representations in relation to support for or opposition to fracking, the present study has contributed understanding of youth representations of anti-fracking protest. We found evidence that anti-fracking protest is seen as less desirable than other forms of participation, but inevitable and of some value in raising awareness, although not in effecting change. Anti-fracking protest is also seen as disruptive, divisive and extreme, disproportionately affecting those already most affected by fracking, with young people seeing protest as less desirable than dutiful forms of dissent. These representations are held against a background of frustration and anger about democratic processes that have failed to serve the interests of youth and their communities.

More broadly, the study raises concerns about the perceived acceptability of protest. Recent activism on issues of social and environmental justice have used protest to demand change. At present, protest is protected in the UK under Articles 10 (freedom of expression) and 11 (freedom of assembly and association) of the Human Rights Act. Barrance (2020) has argued that schools, as state institutions, have a duty to uphold children’s right to protest under Article 15 of the UN Convention on the Rights of the Child, and that the state not only has a duty to permit protest, but to facilitate it—particularly for youth protesters who have few other ways to participate. Protest can be restricted if in the public interest, as has been argued to be the case during the COVID-19 pandemic, when emergency laws were passed to restrict

protest. Narsee (2021) has noted contradictory restrictions to peaceful protest observed during the pandemic: protest remaining banned in countries where shopping centres and places of worship were opened up, and in other contexts, increased use of kettling and detention. In the UK, this included the removal of protesters' face masks during the Black Lives Matter protests in May 2020. The positioning of protest by youth as undesirable (despite disillusionment with alternatives) and extreme is cause for concern, particularly when taken together with the problematic media framing of protesters (Muncie, 2019). Such representations influence how people think and act (e.g. in response to over-policing of protest and support for such strategies).

Biesta and Lawy (2006) have argued:

If policy-makers and politicians are really concerned about young people's democratic citizenship, they should pay attention to and, even more importantly, invest in the actual conditions under which young people can be citizens and learn what it means to be a citizen. . . they need to think very carefully about the impact of their policies and strategies on young people's perceptions of democracy and citizenship. (p. 76)

The young people in this study were well-informed about fracking and about the ways in which they could participate in decision-making. We asked at the beginning of the discussion what young people were learning about democracy through their experiences with fracking and anti-fracking protest in their communities. The undermining of local decision-making (in Lancashire) and the absence of politicians to make a decision (in Northern Ireland) about fracking in Northern Ireland, and recent moves to restrict this option of last resort to raise awareness of issues and be heard by those in power, indicates in the words of one of the young people that '*something's gone wrong somewhere*'.

Acknowledgements

We would like to thank the young people who participated in the study, the schools and colleges who hosted us for the research, and the reviewers for their comments. This study was funded by a small grant from the University of York Department of Education.

Conflict of interest

No potential conflict of interest was reported by the authors.

References

- Aczel, M.R., Makuch, K.E. & Chibane, M. (2018) How much is enough? Approaches to public participation in shale gas regulation across England, France, and Algeria, *The Extractive Industries and Society*, 5(4), 427–440.
- Alexander, C. & Weekes-Bernard, D. (2017) History lessons: Inequality, diversity and the national curriculum, *Race Ethnicity and Education*, 20(4), 478–494.
- Alsop, S. & Bencze, L. (2014) Activism! Toward a more radical science and technology education, in: J. Bencze & S. Alsop (Ed.) *Activist science and technology education (Cultural studies of science education, vol. 9)* (Dordrecht, Springer), 1–19.

- Banaji, S. (2008) The trouble with civic: A snapshot of young people's civic and political engagements in twenty-first-century democracies, *Journal of Youth Studies*, 11(5), 543–560.
- Barrance, R. (2020) *The right to protest: A children's rights perspective on the school climate strikes*. Available online at: www.bera.ac.uk/blog/the-right-to-protest-a-childrens-rights-perspective-on-the-school-climate-strikes (accessed 15 March 2021).
- Bell-James, J. (2020) These young Queenslanders are taking on Clive Palmer's coal company and making history for human rights. The Conversation. Available online at: <https://theconversation.com/these-young-queenslanders-are-taking-on-clive-palmers-coal-company-and-making-history-for-human-rights-138732> (accessed 31 May 2021).
- Biesta, G. & Lawy, R. (2006) From teaching citizenship to learning democracy: Overcoming individualism in research, policy and practice, *Cambridge Journal of Education*, 36(1), 63–79.
- Boulianne, S. (2015) Social media use and participation: A meta-analysis of current research, *Information, Communication & Society*, 18(5), 524–538.
- Bugden, D., Evensen, D. & Stedman, R. (2017) A drill by any other name: Social representations, framing, and legacies of natural resource extraction in the fracking industry, *Energy Research & Social Science*, 29, 62–71.
- Buijs, A., Hovardas, T., Figari, H., Castro, P., Devine-Wright, P., Fischer, A. et al (2012) Understanding people's ideas on natural resource management: Research on social representations of nature, *Society & Natural Resources*, 25(11), 1167–1181.
- CCEA, (n.d.). <https://ccea.org.uk/learning-life-and-work>
- Checkoway, B. & Gutierrez, L.M. (2006) Youth participation and community change, *Journal of Community Practice*, 14(1–2), 1–9.
- Clarke, C., Boudet, H. & Bugden, D. (2012) *Fracking in the American mind: Americans' views on hydraulic fracturing in September, 2012*. Yale Project on Climate Change Communication (New Haven, CT, Yale University and George Mason University).
- Department for Education (2015) The prevent duty. Departmental advice for schools and childcare providers. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/439598/prevent-duty-departmental-advice-v6.pdf (accessed 31 May 2021).
- Dunlop, L., Atkinson, L., Stubbs, J.E. & Diepen, M.T.V. (2020) The role of schools and teachers in nurturing and responding to climate crisis activism, *Children's Geographies*. <https://doi.org/10.1080/14733285.2020.1828827>.
- Eaton, E.M. & Day, N.A. (2020) Petro-pedagogy: Fossil fuel interests and the obstruction of climate justice in public education. *Environmental Education Research*, 26(4), 457–473.
- Eaton, E. & Kinchy, A. (2016) Quiet voices in the fracking debate: Ambivalence, nonmobilization, and individual action in two extractive communities (Saskatchewan and Pennsylvania), *Energy Research & Social Science*, 20, 22–30.
- Edwards, D.B. Jr (2012) Social movement oriented citizenship in Colombia: The effects of curriculum, pedagogy and extra-curricular activities on student orientation, *Education, Citizenship and Social Justice*, 7(2), 117–128.
- Environnement Jeunesse (2021) *Youth vs Canada*. Available online at: <https://enjeu.qc.ca/justice-eng/> (accessed 15 March 2021).
- European Union (2020) *Youth participation in democratic life*. Available online at: https://europa.eu/youth/es/article/50/43811_en (accessed 26 November 2020).
- Farthing, R. (2010) The politics of youthful antipolitics: Representing the 'issue' of youth participation in politics, *Journal of Youth Studies*, 13(2), 181–195.
- Fowler, J. (2020, October 18) *Fracking: Tamboran to use 'conventional' drilling in shale gas search*. Available online at: www.bbc.co.uk/news/uk-northern-ireland-54576103
- Gallagher, T. (2019) *Education, equality and the economy*. Available online at: www.qub.ac.uk/home/Filestore/Fileupload,925382,en.pdf (accessed 15 March 2021).
- Gilmore, J., Jackson, W.H., Monk, H. & Short, D. (2019) *Protesters' experiences of policing at anti-fracking protests in England, 2016–2019: A national study*. Available online at: <http://researchonline.ljmu.ac.uk/id/eprint/11633/1/Gilmore%20Jackson%20Monk%20and%20Short%202019%20National%20Report%20small%207.pdf> (accessed 15 March 2021).

- Glackin, M., King, H., Cook, R. & Greer, K. (2018) *Understanding environmental education in secondary school in England*. Report 2: The practitioners' perspective (London, King's College).
- Harré, R. (1998) The epistemology of social representations, in: U. Flick (Ed.) *The psychology of the social* (Cambridge, Cambridge University Press), 129–137.
- Hay, C. (2007) *Why we hate politics* (Cambridge, Polity).
- Henn, M. & Foard, N. (2014) Social differentiation in young people's political participation: The impact of social and educational factors on youth political engagement in Britain, *Journal of Youth Studies*, 17(3), 360–380.
- Höijer, B. (2010) Emotional anchoring and objectification in the media reporting on climate change, *Public Understanding of Science*, 19(6), 717–731.
- Home Office (2021) *Police, Crime, Sentencing and Courts Bill 2021: Protest powers factsheet*. Available online at: www.gov.uk/government/publications/police-crime-sentencing-and-courts-bill-2021-factsheets/police-crime-sentencing-and-courts-bill-2021-protest-powers-factsheet (accessed 15 March 2021).
- Howarth, C., Andreouli, E. & Kessi, S. (2014) Social representations and the politics of participation, in: P. Nesbitt-Larking, C. Kinnvall & T. Capelos with H. Dekker (Eds) *The Palgrave handbook of global political psychology* (London, Palgrave Macmillan), 19–38.
- Howarth, R.W., Ingraffea, A. & Engelder, T. (2011) Should fracking stop?, *Nature*, 477(7364), 271–275.
- Howell, R.A. (2018) UK public beliefs about fracking and effects of knowledge on beliefs and support: A problem for shale gas policy, *Energy Policy*, 113, 721–730.
- Jaspal, R. & Nerlich, B. (2014) When climate science became climate politics: British media representations of climate change in 1988, *Public Understanding of Science*, 23(2), 122–141.
- Joint Council for Qualifications (2019) *GCSE (Full Course) Outcomes for key grades for UK, England, Northern Ireland & Wales, including UK age breakdowns*. Available online at: www.jcq.org.uk/examination-results/ (accessed 15 March 2021).
- Kilgo, D.K. & Harlow, S. (2019) Protests, media coverage, and a hierarchy of social struggle, *The International Journal of Press/Politics*, 24(4), 508–530.
- Lefevre, F. & Lefevre, A.M.C. (2014) Discourse of the collective subject: Social representations and communication interventions, *Texto & Contexto – Enfermagem*, 23(2), 502–507.
- Malmberg, C. & Urbas, A. (2020) The virtue of citizenship: The deficit of democratic politics in science education, in: W. Melville & D. Kerr (Eds) *Virtues as integral to science education: Understanding the intellectual, moral, and civic value of science and scientific inquiry* (New York, Routledge), 143–158.
- Markova, I. (2000) Amédée or how to get rid of it: Social representations from a dialogical perspective, *Culture & Psychology*, 6(4), 419–460.
- Martínez-Sierra, G., Valle-Zequeida, M.E., Miranda-Tirado, M. & Dolores-Flores, C. (2016) Social representations of high school students about mathematics assessment, *Canadian Journal of Science, Mathematics and Technology Education*, 16(3), 247–258.
- Melo, D.F. & Stockemer, D. (2014). Age and political participation in Germany, France and the UK: A comparative analysis, *Comparative European Politics*, 12(1), 33–53.
- Moscovici, S. (1976) *Social influence and social change* (European monographs in social psychology, vol. 10) (London, European Association of Experimental Social Psychology in conjunction with Academic Press).
- Moscovici, S. & Duveen, G. (2000) *Social representations: Explorations in social psychology* (Cambridge, Polity Press).
- Muncie, E. (2019) 'Peaceful protesters' and 'dangerous criminals': The framing and reframing of anti-fracking activists in the UK, *Social Movement Studies*, 19(4), 464–481.
- Narsee, A. (2021) *Europeans' right to protest under threat*. Available online at: <https://carnegieeurope.eu/2021/01/27/europeans-right-to-protest-under-threat-pub-83735> (accessed 15 March 2021).
- O'Connor, U., Anderson Worden, E., Bates, J. & Gstrein, V. (2020) Lessons learned from 10 years of citizenship education in Northern Ireland: A critical analysis of curriculum change, *The Curriculum Journal*, 31, 479–494.

- O'Brien, K., Selboe, E. & Hayward, B. (2018) Exploring youth activism on climate change: Dutiful, disruptive, and dangerous dissent, *Ecology and Society*, 23(3), 42.
- Ofqual (2016) *GCSE Subject level conditions and requirements for geology*. Ref. Ofqual/16/5912. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/513575/gcse-subject-level-conditions-and-requirements-for-geology.pdf (accessed 15 March 2021).
- Pickard, S. (2019) *Politics, protest and young people* (London, Palgrave Macmillan).
- Pilkington, H. & Pollock, G. (2015) 'Politics are bollocks': Youth, politics and activism in contemporary Europe, *The Sociological Review*, 63, 1–35.
- Priestley, S. (2018) *Shale gas and fracking*. House of Commons Library Briefing Paper No. CBP 6073. Available online at: <http://researchbriefings.files.parliament.uk/documents/SN06073/SN06073.pdf> (accessed 15 March 2021).
- QSR International (2020) *NVivo qualitative data analysis software*. Available online at: <https://qsrinternational.com/nvivo/nvivo-products/>
- Renström, E.A., Aspernäs, J. & Bäck, H. (2020) The young protester: The impact of belongingness needs on political engagement, *Journal of Youth Studies*. <https://doi.org/10.1080/13676261.2020.1768229>
- Smith, N. & Joffe, H. (2013) How the public engages with global warming: A social representations approach, *Public Understanding of Science*, 22(1), 16–32.
- Soler-i-Martí, R. (2015) Youth political involvement update: Measuring the role of cause-oriented political interest in young people's activism, *Journal of Youth Studies*, 18(3), 396–416.
- Starkey, H. (2018) Fundamental British Values and citizenship education: Tensions between national and global perspectives, *Geografiska Annaler: Series B, Human Geography*, 100(2), 149–162.
- Tannock, S. (2020) The oil industry in our schools: From Petro Pete to science capital in the age of climate crisis, *Environmental Education Research*, 26(4), 474–490.
- Thew, H., Middlemiss, L. & Paavola, J. (2020) 'Youth is not a political position': Exploring justice claims-making in the UN climate change negotiations, *Global Environmental Change*, 61, 102036.
- Thomas, A., Cretney, R. & Hayward, B. (2019) Student Strike 4 Climate: Justice, emergency and citizenship, *New Zealand Geographer*, 75(2), 96–100.
- United Nations (1989) *The United Nations Convention on the Rights of the Child*. Available online at: www.unicef.org/uk/what-we-do/un-convention-child-rights/ (accessed 15 March 2021).
- Vigeta, S.M., Garcia, H.H., Tufik, S. & Menicucci de Oliveira, E. (2012) Sleep in postmenopausal women, *Qualitative Health Research*, 22(4), 466–475.
- van Zomeren, M., Leach, C.W. & Spears, R. (2012) Protesters as 'passionate economists': A dynamic dual pathway model of approach coping with collective disadvantage, *Personality and Social Psychology Review*, 16(2), 180–199.
- Weinberg, J. & Flinders, M. (2018) Learning for democracy: The politics and practice of citizenship education, *British Educational Research Journal*, 44(4), 573–592.
- Whitton, J., Brasier, K., Charnley-Parry, I. & Cotton, M. (2017) Shale gas governance in the United Kingdom and the United States: Opportunities for public participation and the implications for social justice, *Energy Research & Social Science*, 26, 11–22.
- Worden, E.A. & Smith, A. (2017) Teaching for democracy in the absence of transitional justice: The case of Northern Ireland, *Comparative Education*, 53(3), 379–395.
- Zummo, L., Gargroetzi, E. & Garcia, A. (2020) Youth voice on climate change: Using factor analysis to understand the intersection of science, politics, and emotion, *Environmental Education Research*, 26(8), 1207–1226.